

WHAT IS CLAIMED IS:

1. A thermal insulating material made of non-woven fabric including multiple types of fiber, comprising:

a matrix fiber;

a heat-melting fiber; and

a thin film formed by said heat-melting fiber being fused on a surface of said thermal insulating material.

2. A thermal insulating material having two or more card webs, each including multiple types of fiber, stacked one on top of another, wherein

each of said card webs includes

a matrix fiber,

a heat-melting fiber, and

a thin film formed by said heat-melting fiber being fused on a surface of each of said card webs,

each of said card webs having said heat-melting fibers fused together within the card web, and

said card webs being integrated by fusing of said heat-melting fibers.

3. The thermal insulating material according to claim 2, which does not conduct heat easily in a direction said card webs are stacked.

4. A method of manufacturing a thermal insulating material, comprising the steps of:

mixing a matrix fiber with a heat-melting fiber;

forming mixed fibers into a card web; and

heating a surface of said card web to fuse the heat-melting fiber on the surface of said card web to form a thin film on the surface of said card web.

5. A method of manufacturing a thermal insulating material in

which two or more card webs, each including multiple types of fiber, are stacked, comprising the steps of:

mixing a matrix fiber with a heat-melting fiber;

5 forming mixed fibers into a card web;

heating a surface of said card web to fuse said heat-melting fiber on the surface of said card web to form a thin film on the surface of said card web;

10 stacking two or more of said card webs having undergone heat treatment in the step of forming said thin film; and

fusing the heat-melting fiber inside said two or more card webs stacked and fusing the heat-melting fiber between said card webs to integrate said card webs.